

various springs ; and it appears that the action of this substance, on the living system, unites with its chemical qualities in associating it with iodine. So marked and so decisive indeed are its effects, that various medical waters are conjectured to owe their beneficial qualities to the presence, in extremely minute portions, of this elementary body, unknown and unsuspected previously to the researches of M. Balard.

To him, therefore, I am directed by your Council to deliver the other Royal Medal, in testimony of the high respect entertained for his ability, industry, and skill displayed in the discovery of bromine.

The Copley and the Rumford Medals have not been awarded.

The Society next proceeded to the election of the Council and Officers for the ensuing year, when the following were declared to be the lists :—

Council.—Peter Barlow, Esq. ; John Barrow, Esq. ; William Cavendish, Esq. ; Sir Astley Cooper, Bart. ; Henry Ellis, Esq. ; Michael Faraday, Esq. ; Colonel Fitzclarence ; Davies Gilbert, Esq. ; Captain Henry Kater ; Viscount Melville ; Sir George Murray, Bart. ; Rev. George Peacock ; Sir Robert Peel, Bart. ; A. Wilson Philip, M.D. ; John Pond, Esq. ; George Rennie, Esq. ; N. Aylward Vigors, Esq.

President : His Royal Highness the Duke of Sussex, K.G.—*Treasurer* : John William Lubbock, Esq.—*Secretaries* : Peter Mark Roget, M.D., and John George Children, Esq.

December 9.

His Royal Highness the Duke of SUSSEX, President, in the Chair.

Henry Percy Gordon, Esq., M.A., and the Rev. John Warren, were elected Fellows.

The following Presents were received, and thanks ordered for them :—

Astronomical Observations made at the Armagh Observatory. By T. R. Robinson, D.D. Vol. I. Part II. 4to.—*Presented by the Rev. Dr. Robinson.*

The Philosophical Magazine and Annals of Philosophy. By R. Taylor, F.L.S. and R. Phillips, F.R.S. No. 48. (Dec. 1830.) 8vo.—*The Editors.*

The Edinburgh Journal of Natural and Geographical Science. New Series. No. 1. (Dec. 1830.) 8vo.—*The Editor.*

Fraser's Magazine for Town and Country. No. 10. (Nov. 1830.)—*The Proprietor.*

The National Portrait Gallery of Illustrious and Eminent Personages of the Nineteenth Century. By Wm. Jerdan, Esq. No. 20. 8vo.—*The Proprietors.*

The British Imperial Calendar for the Year 1831. 8vo.—*John Frost, Esq.*

Commentarii de rebus in Scientia Naturali et Medicina gestis.
Vol. 1-37. 8vo. Lipsiæ 1752-1803.

— Supplementa et Indices. Vol. 1-6. 8vo. 1763-93.—
Sir Thomas Phillipps, Bart. F.R.S.

Elements of Chemistry, including the recent Discoveries and Doctrines of the Science. By Edward Turner, M.D. F.R.S. 8vo. 1831.—*The Author.*

On the Natural History of the Vicinity of Stockton-on-Tees. By John Hogg, M.A. 8vo.—*The Author.*

The Genera and Species of Orchideous Plants. Part I., Malaxideæ. By John Lindley, Esq. F.R.S. 8vo.—*The Author.*

The Genera and Species of Orchideous Plants, by John Lindley, Esq. F.R.S.; illustrated by Drawings on Stone from the Sketches of Francis Bauer, Esq. F.R.S. Part I. Fructification and Genera. Folio.—*The Authors.*

Researches about Atmospheric Phenomena. Third Edition, corrected and enlarged, with a Series of Engravings illustrative of the Modifications of the Clouds: to which is added the Calendar of Nature. By Thomas Forster, M.B. 8vo.—*The Author.*

Sections and Views illustrative of Geological Phenomena. By H. T. de la Beche, Esq. F.R.S. 4to.—*The Author.*

On the recent Improvements in the Art of distinguishing the various Diseases of the Heart, being the Lumleian Lectures delivered before the Royal College of Physicians in the year 1829. By John Elliotson, M.D. F.R.S. folio.—*The Author.*

A Letter to Sir James M'Grigor, M.D. F.R.S., on the Sanitary Management of Gibraltar Fever. By David Barry, M.D. 8vo.—*The Author.*

Medicine no Mystery; being a brief Outline of the Principles of Medical Science: designed as an Introduction to their general Study, as a branch of a liberal Education. Second Edition. By John Morrison, M.D. 8vo.—*The Author.*

A short Treatise on the Principles of the Differential and Integral Calculus. Part II. By the Rev. Baden Powell, M.A. F.R.S. 8vo.—*The Author.*

An elementary Treatise on the Geometry of Curves and Curved Surfaces, investigated by the application of the Differential and Integral Calculus. By the Rev. Baden Powell, M.A. F.R.S. 8vo.—*The Author.*

The London Literary Gazette. Nos. 723-4.—*The Proprietors.*

A Paper was read, entitled, "On the performance of fluid refracting telescopes, and on the applicability of this principle of construction to very large instruments." By Peter Barlow, Esq. F.R.S. Corresponding Member of the Institute of France, of the Imperial Academy of Petersburg, &c.

In the first part of this paper the author adduces proofs of the efficacy of telescopes constructed with fluid lenses, on the principles developed in his two former papers, published in the Philosophical Transactions, in separating double stars, resolving nebulae, and exhibiting

different appearances in the discs of the planets. He institutes, with this view, a comparison between the performance of his telescope of 8 inches aperture and 12 feet in length, with Mr. Herschel's telescope, made with his new 20 inches speculum, and with Sir James South's new refractor, of 12 inches aperture and 20 feet focal length. In Mr. Barlow's telescope η Persei, which is marked as double in South and Herschel's catalogue, is seen distinctly sextuple. The stars composing σ Orionis, marked in the catalogue as two distinct sets of stars, each triple, are shown in Mr. Barlow's telescope as being both quadruple, with two very fine stars between them. A very fine double star was discovered by Mr. Herschel between the two which compose β Capricorni, and was considered by him as a very severe test: this star is seen distinctly in Mr. Barlow's telescope, but not double.

Messier's 22nd nebula is resolved by Sir James South's telescope into an immense number of brilliant small stars. In Mr. Barlow's telescope the same resolution is effected, though somewhat less completely.

The two last-mentioned instances he considers as affording excellent criteria of the exact limits of the power of the instrument.

Mr. Barlow next examined Jupiter and Mars in order to compare the defining powers of the two instruments. Both these planets were more sharply defined in Sir James South's telescope than in that of the author, but in this respect the superiority of the former instrument was by no means as great as he expected: and in the exhibition of the shadow of one of Jupiter's satellites passing over his disc, there was no apparent difference between the two instruments. When applied to Mars, the former with a power of 1200, the latter with one of 260, the effects were nearly equal.

An experience of three years has not shown the slightest perceptible change in either the quantity or quality of the fluid employed as the lens of the author's three-inch telescope; neither has the glass inclosing it suffered any diminution of its transparency. The author conceives it, therefore, to be sufficiently established, that sulphuret of carbon is capable of supplying all the properties of flint-glass, which are required in the construction of a telescope; and moreover, that in consequence of its high dispersive power, it admits of being placed so far behind the principal lens of plate, or crown-glass, as to require to be only one half of the diameter of the latter. This combination also gives a focal power of one and a half time the length of the tube; and consequently the telescope may be reduced in length to two thirds of that which a glass telescope of the usual construction would require for an equal amount of spherical aberration. In the conclusion of his paper, the author proposes what he considers as a great improvement in the plan of construction for very large telescopes on this principle: it consists in making the object-lenses double, by which their spherical aberration may at once be reduced to about one fourth of its present amount, and will then admit of easy correction by a fluid lens, without requiring the inconvenient curvatures for its surfaces which

are now necessary. This construction will also be attended with the advantage of requiring a much smaller thickness in the plate-glass, and will thus facilitate the selection of proper pieces of glass for being worked into an object lens.

From all these considerations, the author entertains the confident expectation of being able, with proper assistance, to construct a telescope of two feet aperture and 24 feet in length, which would as much exceed the most powerful telescopes of the present day, as these exceed the refractors which existed at the close of the last century.

December 16.

His Royal Highness the Duke of SUSSEX, President, in the Chair.

The following Presents were received, and thanks ordered for them:—

Illustrations of Mr. S. Cooper's Surgical Dictionary. Published Monthly. Each Part containing four Lithographic Plates, with Letter-press descriptions, and references to the Text. Parts 1-3. 8vo.—*Presented by the Author.*

Occultations of Fixed Stars by the Moon in November and December. 1830. Computed for Greenwich, by Thomas Henderson, Esq.—*The Astronomical Society.*

The Geographical System of Herodotus examined and explained, by a comparison with those of other ancient Authors, and with modern Geography. With Dissertations on the Itinerary State of the Greeks, the Expedition of Darius Hystaspes, the position and remains of ancient Babylon, the alluvions of the Nile, and Canals of Suez; the Oasis and Temple of Jupiter Ammon, the ancient circumnavigation of Africa, and other subjects of History and Geography. 2nd Edition, revised. By James Rennell, Esq. F.R.S. 8vo.—*Mrs. Rodd.*

Elements of the Economy of Nature, or the Principles of Physics, Chemistry, and Physiology; founded on the recently discovered Phenomena of Light, Electro-Magnetism, and Atomic Chemistry. By J. G. Macvicar, M.A. 8vo.—*The Author.*

Illustrations of the atmospherical Origin of Epidemic Diseases. 2nd Edition. By T. Forster, M.B. 8vo.—*The Author.*

Observations on the Union which has become necessary between the hitherto separated branches of the Medical Profession, and on the Foundation of a Faculty of Medicine. By T. Forster, M.B. 8vo.—*The Author.*

On the Glanders in the Human Subject. By John Elliotson, M.D. F.R.S. 8vo.—*The Author.*

Science without a Head; or the Royal Society dissected. By one of the 687 F.R.S. sss. 8vo.—*The Author.*

Berliner Astronomisches Jahrbuch für 1832. Mit Genehmigung der Königlichen Academie der Wissenschaften, herausgegeben von J. F. Encke, Königl. Astronom. 8vo.—*Professor Encke, For. Mem. R.S.*